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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,803	06/27/2003	Shin-Ichi Ono	030791	5895

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EXAMINER	
WOOD, AMANDA P	

ART UNIT	PAPER NUMBER
1655	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/606,803	ONO ET AL.	
	Examiner	Art Unit	
	Amanda P. Wood	1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *17 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *13-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election without traverse of Group I (Claims 1-12) in the reply filed on 17 November 2005 is acknowledged.

Claims 13-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 17 November 2005.

Claims 1-12 are presented for consideration on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10 and 11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The application discloses two established cell lines (i.e., STIP-1 cells and STIP-3 cells) that are encompassed by the definitions for **biological material** set forth in 37 C.F.R. § 1.801. Because it is apparent that this biological material is essential for

practicing the claimed invention, it must be obtainable by a reproducible method set forth in the specification or otherwise be known and readily available to the public as detailed in 37 C.F.R. §§ 1.801 through 1.809.

It is unclear whether this biological material is known and readily available to the public or that the written instructions are sufficient to reproducibly construct this biological material from starting materials known and readily available to the public. Accordingly, availability of such biological material is deemed necessary to satisfy the enablement provisions of 35 U.S.C. § 112. If this biological material is not obtainable or available, the requirements of 35 U.S.C. § 112 may be satisfied by a deposit of the biological material. In order for a deposit to meet all criteria set forth in 37 C.F.R. §§ 1.801-1.809, applicants or assignee must provide assurance of compliance with provisions of 37 C.F.R. §§ 1.801-1.809, in the form of a declaration or applicant's representative must provide a statement. The content of such a declaration or statement is suggested by the enclosed attachment. Because such deposit will not have been made prior to the effective filing date of the instant application, applicant is required to submit a verified statement from a person in a position to corroborate the fact, which states that the biological material which has been deposited is the biological material specifically identified in the application as filed (37 C.F.R. § 1.804). Such a statement need not be verified if the person is an agent or attorney registered to practice before the Office. Applicant is also reminded that the specification must contain reference to the deposit, including deposit (accession) number, date of deposit, name and address of the depository, and the complete taxonomic description.

In lines 1-9 of page 13 of the specification, Applicant indicates that a deposit has been made. However, the part of the deposit requirement has not been met. Applicant is required to indicate the date of deposit and the address of the depository. These requirements have not been met.

SUGGESTION FOR DEPOSIT OF BIOLOGICAL MATERIAL ATTACHMENT

A declaration by applicant or assignee, or a statement by applicant's agent identifying a deposit of biological material and averring the following may be sufficient to overcome an objection or rejection based on a lack of availability of biological material. Such a declaration:

1. Identifies declarant.

2. States that a deposit of the material has been made in a depository affording permanence of the deposit and ready accessibility thereto by the public if a patent is granted. The depository is to be identified by name and address. (See 37 C.F.R. § 1.803).

3. States that the deposited material has been accorded a specific (recited) accession number.

4. States that all restrictions on the availability to the public of the material so deposited will be irrevocably removed upon the granting of the patent. (See 37 C.F.R. § 1.808(a)(2)).

5. States that the material has been deposited under conditions that assure that access to the material will be available during the pendency of the patent application to one determined by the Commissioner to be entitled thereto under 37 C.F.R. § 1.14 and 35 U.S.C. § 122. (See 37 C.F.R. § 1.808(a)(1)).

6. States that the deposited material will be maintained with all the care necessary to keep it viable and uncontaminated for a period of at least five years after the most recent request for the furnishing of a sample of the deposited microorganism, and in any case, for a period of at least thirty (30) years after the date of deposit or for the enforceable life of the patent, whichever period is longer. See 37 C.F.R. § 1.806).

7. That he/she declares further that all statements made therein of his/her own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the instant patent application or any patent issuing thereon.

Alternatively, it may be averred that deposited material has been accepted for deposit under the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (e.g., see 961 OG 21, 1977) and that all restrictions on the availability to the public of the material so deposited will be irrevocably removed upon the granting of a patent.

Additionally, the deposit must be referred to in the body of the specification and be identified by deposit (accession) number, date of deposit, name and address of the depository, and the complete taxonomic description.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In line 2 of Claim 2, the phrase "is used" is recited. The same phrase is recited at the end of each of claims 3-11. It is clear that the phrase "is used" refers to "an established cell line" but it is unclear what "an established cell line" is being used for, or where it is being used (i.e., is it the same as the established cell line originated from Sturgeon of claim 1, or is it an additional established cell line?). The phrase "is used" makes it unclear just what is being done with the cell line in each of these claims.

In addition, in line 2 of Claim 12, the phrase "is used" is recited referring to "an Alamar Blue assay." It is unclear where or by what means the Alamar Blue assay is to be used in the toxic evaluation of a specimen.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Watson et al (Dis. Of Aquat Org.1998).

A cytotoxic assay wherein the toxicity of a specimen is evaluated based upon its toxicity to an established cell line originated from Sturgeon is claimed.

Watson et al teach a method using established Sturgeon cell lines for assays involving white sturgeon iridovirus, or WSIV (i.e., a specimen). The cell lines obtained from sturgeon originated from the swim bladder (i.e., epithelial cells), spleen, liver, olfactory organ, and brain (see, for example, Abstract and pg. 174, col. 1 "Methods"). Watson et al further teach a method wherein cell layers are passaged to flasks and after 20 passages, cell cultures showing 95% or greater homogeneity and were stable to subculture were considered established cell lines. Furthermore, Watson et al teach that 70 or more passages were possible with the cell line from White sturgeon spleen, or WSS-2 cell line.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson et al in view of Fent (Toxicol. In Vitro 2001), Hiramatsu et al (Comp. Biochem.

And Physiol. 2002), Babich et al (Ecotoxic. And Envir. Safety 1987) and in view of Okamura et al (Chemosphere 2002).

Watson et al is relied upon for the reasons set forth above.

Watson et al does not specifically teach a method of evaluating the toxicity of specimen other than viruses toward fish cell lines.

Fent beneficially teaches that fish cell lines are versatile tools for characterization of the toxic action of chemicals, especially in aquatic ecosystems. Fent further beneficially teaches that cytotoxicity can be assessed in fish cell lines for a variety of different environmental chemicals (i.e., specimen), including heavy metals (see, for example, Abstract, pg 478 and pg. 480).

Watson et al does not specifically teach an assay method using an established cell line of Bester origin.

Hiramatsu et al beneficially teach that since natural populations of sturgeon have decreased and are almost exterminated in Japan, Bester (i.e., a sturgeon hybrid) has been found suitable for artificial culture, making Bester much more readily available than other species of Sturgeon to use in cytotoxicity assays. Furthermore, Hiramatsu et al also beneficially teach that since Bester is a hybrid of two types of Sturgeon (i.e., beluga and starlet), Bester would have qualities of both species of Sturgeon. Based upon the beneficial teachings of Hiramtsu et al, it would have been both obvious and beneficial to use a cell line derived from Bester in a cytotoxic assay, particularly because Bester would be the most readily available type of Sturgeon available, and furthermore, because of the economic importance of Sturgeon, it would be beneficial to

test for the cytotoxicity of specimen against Sturgeon so as to protect the Sturgeon population from further damage by aquatic toxic specimen.

Watson et al does not explicitly teach a method using fish cell lines of epithelial origin.

Babich et al beneficially teaches that epithelial cells (e.g., particularly in the gill tissue) are the initial cell types encountered by chemical contaminants and water-borne toxicants. Babich et al specifically teach a method of assessing the cytotoxicity of aquatic pollutants (i.e., specimen) to an epithelial cell line derived from the skin of fathead minnows. In particular, Babich et al teach that using a cell line derived from epithelial cells of fish provide a good model for the effect toxic specimen have on fish in their natural environment, since epithelial cells are some of the first cells to come into contact with toxic specimen in the water. Based upon the beneficial teaching of Babich et al, it would have been obvious to one of ordinary skill in the art at the time the invention was made to seek a type of cell line (i.e., an epithelial cell of ocular origin) in fish that would be exposed under normal circumstances to aquatic toxins (i.e., viruses, chemicals, etc.) so as to test the effect toxic specimen have on fish. It would be beneficial to use an epithelial cell line from fish since these cells are usually first to contact toxic specimen in the water. Furthermore, it would be both obvious and beneficial to one of ordinary skill in the art to seek and use a sensitive cell line derived from the epithelial cells of fish, particularly those of Bester or Sturgeon origin, because natural Sturgeon populations are rapidly decreasing, and Bester are more readily available than other types of Sturgeon due to their ability to be cultured artificially.

Watson et al do not specifically teach a cytotoxicity assay using Alamar Blue to evaluate the toxicity of a specimen.

Okamura et al beneficially teach a method of using an Alamar Blue assay to determine cell viability after suspension-cultured fish cell lines were exposed to toxic compounds in vitro. Based upon the beneficial teachings of Okamura et al, it would have been both obvious and beneficial to use the Alamar Blue assay to determine the toxicity of a specimen in the assay instantly claimed because the beneficial utility of such a cell viability assay with regard to fish cell lines has been clearly demonstrated.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the methods disclosed by Watson et al based upon the beneficial teachings provided by the secondary references with respect to the art-recognized method of using established fish cell lines (particularly cell lines of Sturgeon origin) in cytotoxicity assays as discussed above. Furthermore, the cited references particularly point out that based upon the ability of Bester to be cultured, Bester would be readily available but also prone to exposure to toxic specimen such as fish viruses and chemicals, and therefore, it would have been both obvious and beneficial to use a cell line of Bester origin for cytotoxicity assays. Furthermore, the cited references particularly point out that epithelial cells are often the first cells to encounter water-borne toxicants (i.e., chemicals and/or viruses), and that it would be beneficial to use cells of epithelial origin for cell lines used in cytotoxicity assays, and therefore, it would have been obvious and beneficial for the skilled artisan to use the methods taught by Watson et al so as to develop a cytotoxicity assay that uses a cell

line of Bester epithelial origin. In addition, it would have been obvious and beneficial for one of ordinary skill in the art to seek and use a sensitive cell line derived from Bester epithelial cells, particularly from the eye, since these cells would also normally be among the first to be exposed to toxic specimen in the water in which they live. The result-effective adjustment of particular conventional working conditions (e.g., using a particular epithelial cell line and/or using a cell line having particular qualities-i.e., possessing a certain number of passages cultures, or a particular doubling time or a particular plating efficiency) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole, was *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made, as evidenced by the cited references, especially in the absence of evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda P. Wood whose telephone number is (571) 272-8141. The examiner can normally be reached on M-F 8:30AM -5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on (571) 272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

APW
Examiner
Art Unit 1655

APW

CHRISTOPHER R. TATE
PRIMARY EXAMINER